	CONTENIS	Page No.
CHAPTER-1	INTRODUCTION	1 age No.
	Purpose and Scope	1
	Aim and objectives	2
	Study area	3
	Climate	4
	Rainfall	4
	Physiography and drainage	4
	Approach and methodology	6
CHAPTER-2	GEODYNAMIC SETTING OF NSF	7
	Regional Geology	7
	Structural setup	10
	The NSF zone in Central India	11
	The NSF zone in Gujarat	13
	Reactivation history and seismicity along the NSF	14
	Previous work on Quaternary geology and neotectonics	16
CHAPTER-3	MATERIAL AND METHOD	19
	Field studies	19
	Remote Sensing and GIS studies	20
	Ground Penetrating Radar studies	22
CHAPTER-4	TECTONIC GEOMORPHOLOGY OF THE NSF ZONE	25
	Tectonic geomorphology	27
	Upland zone	28
	Deccan volcanic upland	29 30
	Tertiary highland Alluvial zone	30 31
	NSF scarp	31
	Fluvial Geomorphology	35
	Drainage pattern	35
	Upland zone	35
	Alluvial zone	35
	Basic morphometric parameters	36
CHAPTER-5	QUANTITATIVE LANDSCAPE ANALYSIS OF THE NSF ZO	DNE 40
	Terrain analysis	40
	DEM analysis	40
	Slope analysis	41
	Aspect analysis	41
	Shaded relief analysis	42
	Longitudinal river profiles	43
	Geomorphic indices	45
	Mountain front sinuosity	46
	Hypsometric curve and Hypsometric integral	47
	Drainage basin asymmetry	48
	Stream Length gradient index	50
	Sinuosity	55
	Inferences	56
	Geomorphic analysis	56
	Pattern of neotectonic activity	61

CONTENTS

CHAPTER-6 LATE QUATERNARY BAJADA SEDIMENTATION	
IN THE NSF ZONE	62
Bajada sedimentation in segment I and II	62
Morphology and age of the bajada surface	64
Sedimentary facies, processes and depositional environment	65
Depositional model	71
Importance of occurrence of Bajada surface	74
Implication for tectonics and topography	74
Implication for climate	75
CHAPTER -7 EVIDENCE OF NEOTECTONIC ACTIVITY	77
Nature and expression of NSF	77
Evidence of late Quaternary offset along the NSF	85
Inferred pattern of neotectonic activity	87
CHAPTER-8 GROUND PENETRATING RADAR (GPR) STUDIES	
Importance of GPR technique in active fault studies	90
Recognition of NSF in GPR data	91
Selection of sites for GPR studies	91
Velocity analysis	92
GPR studies in the Segment I	94
GPR studies in the Segment II	98
GPR studies in the Segment III	103
GPR studies in the Segment IV	104
Shallow subsurface nature of the NSF	107
CHAPTER-9 NEOTECTONIC EVOLUTION OF THE NSF ZONE	108
Morphotectonic segmentation	109
Segment I	110
Segment II	111
Segment III	112
Segment IV	113
Late Pleistocene	114
Early Holocene	115
Middle to Late Holocene	116
Neotectonic behavior of NSF and contemporary stress regime	117
CHAPTER-10 CONCLUSIONS	
REFERENCES	123
LIST OF PUBLICATIONS	